

Appl. No. 10/811,790  
Amdt dated May 26, 2006  
Reply to Office Action of March 8, 2006

Atty. Ref. 81754.0121  
Customer No. 26021

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) An electronic circuit for a contactless tag, comprising:  
means for rectifying an induced electromotive force caused by bringing an antenna coil into close proximity to a reader/writer to generate a rectified voltage;  
a secondary battery; and  
means for being charged according to the rectified voltage and for discharging to the secondary battery,

wherein the means for charging and discharging includes a capacitor that stores a charge according to the rectified voltage, and a resistor through which the capacitor supplies a discharge voltage to the secondary battery so as to charge the secondary battery, and a diode that applies the rectified voltage to the capacitor and prevents the charge charged in the capacitor from flowing back to the means for rectifying the induced electromotive force.

2. (Currently amended) The electronic circuit for a contactless tag according to claim 1, wherein the resistor acts as a time-constant resistor, ~~and wherein the means for charging and discharging comprises:~~

~~a diode that prevents the charge charged in the capacitor from flowing to a portion other than the secondary battery.~~

3. (Original) The electronic circuit for a contactless tag according to claim 2, wherein the capacitor is a device serving as an electric double-layer capacitor or a capacitor whose internal resistance is much smaller than that of the secondary battery and whose electrostatic capacitance is large.

4. (Original) The electronic circuit for a contactless tag according to claim 2, wherein the diode is defined as a first diode and the capacitor is defined as a first capacitor, and

the means for charging and discharging further comprises:

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a second diode connected in series to the first diode; and  
a second capacitor connected in parallel to the first capacitor between the first diode and the second diode, and the second capacitor has a smaller capacitance than the first capacitor.

5. (Original) A contactless tag using the electronic circuit according to claim 1.

6. (Original) The electronic circuit for a contactless tag according to claim 1, further comprising a transceiving device for data communication with the reader/writer.

7. (Original) The electronic circuit for a contactless tag according to claim 6, wherein the transceiving device includes the antenna coil.

8. (Original) The electronic circuit for a contactless tag according to claim 6, wherein the transceiving device includes a resonance circuit.

9. (Original) The electronic circuit for a contactless tag according to claim 1, wherein the secondary battery is a paper type battery.

10. (Original) The electronic circuit for a contactless tag according to claim 1, wherein the secondary battery has an internal resistor.

11. (Original) The electronic circuit for a contactless tag according to claim 1, further comprising a detection circuit that detects a drop in the rectified voltage.

12. (Original) The electronic circuit for a contactless tag according to claim 1, further comprising an electrophoretic display.

13. (Previously Presented) The electronic circuit for a contactless tag according to claim 12, wherein the electrophoretic display includes a writing voltage, a current and a display holding time.

14. (Currently amended) An electronic circuit for a contactless tag, comprising:

a rectification circuit that rectifies an induced electromotive force caused by bringing an antenna coil into close proximity to a reader/writer to generate a rectified voltage;

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a secondary battery; and  
a charging/discharging circuit that charges according to the rectified voltage and that discharges the secondary battery,

wherein the charging/discharging circuit comprises a capacitor that stores a charge according to the rectified voltage, and a resistor through which the capacitor supplies a discharge voltage to the secondary battery so as to charge the secondary battery, and a diode that applies the rectified voltage to the capacitor and prevents the charge charged in the capacitor from flowing back to the rectification circuit.

15. (Currently amended) The electronic circuit for a contactless tag according to claim 14, wherein the resistor acts as a time-constant resistor, ~~and wherein the charging/discharging circuit comprises:~~

~~a diode that prevents the charge charged in the capacitor from flowing to a portion other than the secondary battery.~~

16. (Original) The electronic circuit for a contactless tag according to claim 15, wherein the capacitor is a device serving as an electric double-layer capacitor or a capacitor whose internal resistance is much smaller than that of the secondary battery and whose electrostatic capacitance is large.

17. (Original) The electronic circuit for a contactless tag according to claim 2, wherein the diode is defined as a first diode and the capacitor is defined as a first capacitor, and

the charging/discharging circuit further comprises:

a second diode connected in series to the first diode; and

a second capacitor connected in parallel to the first capacitor between the first diode and the second diode, and the second capacitor has a smaller capacitance than the first capacitor.

18. (Original) The electronic circuit for a contactless tag according to claim 14, further comprising a transceiving device for data communication with the reader/writer.

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19. (Original) The electronic circuit for a contactless tag according to claim 18, wherein the transceiving device includes the antenna coil.

20. (Currently amended) A method for manufacturing an electronic circuit for a contactless tag comprising:

rectifying an induced electromotive force with a rectification circuit caused by bringing an antenna coil into close proximity to a reader/writer to generate a rectified voltage;

providing a secondary voltage with a secondary battery;

charging a charge/discharge circuit according to a rectified voltage and discharging the secondary battery,

storing a charge in a capacitor according to the rectified voltage; and

supplying a discharge voltage via a resistor to the secondary battery so as to charge the secondary battery; and

preventing the charge charged in the capacitor from flowing back to the rectification circuit.